SB

149

Alaska State Senate

Senator Robin Taylor
District A

SB 149 – Timber sales and planning
Sponsor Statement / Sectional Analysis

Senate Bill 149 addresses the planning requirements for forest management, including forest management plans for legislatively designated state forests, Five-Year Schedules of Timber Sales (FYSTSs), and Forest Land Use Plans (FLUPs) for individual timber sales. Currently there are two legislatively designated State Forests, the Tanana Valley State Forest and the Haines State Forest Resource Management Area.

Forest Land Use Plans

Section 1 (AS 38.05.112 (a)) moves the guidance on when general planning requirements under AS 38.04.065 apply to Forest Land Use Plans from AS 38.05.112(c) to .112(a). It does not change the requirements.

Section 2 (AS 38.05.112(b)) deletes the reference to consideration of information on collective effects of forest activities. Consideration of collective effects cannot be done on a sale by sale basis and is better addressed through regional planning under AS 38.04.065 and AS 41.17.230.

Section 3 (AS 38.05.112(c)) deletes the list of specific uses that must be considered in Forest Land Use Plans. It replaces it with a requirement that FLUPs on land outside the State Forests consider non-timber forest resources and uses. This change will make preparation of FLUPs more efficient by deleting the requirement to consider uses and resources that may not be pertinent to individual sales.

Five-Year Schedules of Timber Sales

Section 4 (AS 38.05.113(a)) changes the Five-Year Schedule from an annual to a biennial requirement. This reduces the work required in preparing and reviewing the schedules, while keeping the industry and the public informed about proposed sales.

Section 5 (AS 38.05.113(b)) changes the requirement that a sale be on the two Schedules preceding the sale to a requirement that the sale have been on one of the two Schedules preceding the sale. In combination, Sections 4 and 5 provide flexibility for the department to adjust sale offering dates to respond to market conditions and funding levels, while ensuring that the initial sale proposal has been on a schedule within no more than four years prior to the sale date. Individual sales will still be reviewed through the FLUP process.

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Section 16 (AS 38.05.113(d)) deletes the authority to reoffer sales for two years after their initial offering without relisting them on the Five-year Schedule. This provision is not needed due to the changes in Sections 4 and 5.

State Forest purposes and forest management plans

Sections 8 and 9 (AS 41.15.315(a) and .320)address management plans for the Haines State Forest. They replace the specific planning requirements for the Haines State Forest management area in AS 41.15.315(a) with the requirements for State Forest management plans in AS 41.17.230. With this change, the two State Forests would be subject to the same guidance for management plans. Specific requirements for consultation between the DNR and ADF&G, and between ADF&G and local fish and game advisory committees are retained in AS 41.15.320. These amendments also retain the requirement for a public hearing in Haines and Klukwan prior to plan adoption. They delete the requirements for the plan to be based on an inventory completed within the last 10 years and to revise the plan when a new inventory is done.

Sections 11, 12, and 15 (AS 41.17.200(a), .220, and .400(c)) change the management emphasis in legislatively designated State Forests from a mix of multiple use that provides for timber management to timber management that allows other beneficial uses that are compatible with timber. These sections change the primary purpose of State Forests from "multiples use ... that provides for production, utilization, and replenishment of timber resources" to "timber management...while allowing other beneficial uses", and delete multiple use as a principle for managing a State Forest. These changes apply to the Tanana Valley State Forest. The Haines State Forest purpose is established in AS 41.15.300-.315 and is not changed by this bill.

Section 13 (AS 41.17.230(a)) requires that forest management plans consider nontimber uses to the extent that such uses are compatible with timber management. In conjunction with Section 3, this moves the consideration of nontimber uses in State Forests from the individual Forest Land Use Plans to the management plan for the State Forest. This section would apply to both the Tanana Valley State Forest and the Haines State Forest.

Section 14 (AS 41.17.230(b)) makes the timing requirement for review of forest management plans more flexible. Rather than requiring review every five years, review will be required "as necessary". This will preclude time-consuming reviews when they are not needed. This section will apply to both the Tanana Valley and Haines State Forest.

Section 16 (AS 41.17.210(a)(3) and (4)) deletes the requirement for proposals of new state forests to include findings of incompatibility for the timber and nontimber uses previously listed in AS 38.05.112(c) and agency comments on such findings.

Section 16 (AS 41.17.230(d)) deletes the requirement for forest management plans to be provided to the legislature after adoption.

The amendments on State Forests and forest management plans will not require revisions to the existing management plan for the Tanana Valley State Forests. *(Note: to prevent a need to reopen the Haines State Forest Management Plan, the new language in section 12 (AS 41.17.230) should be amended to refer to the "primary purpose of state forests under AS 41.17.200 or 41.15.300.)*

Riparian management standards

Section 10 (AS 41.17.118(b)) revises the conditions for imposing riparian protection standards on state land that are more stringent than those established in the Forest Resources and Practices Act. This amendment deletes the reference to FLUPs as a basis for requiring more stringent standards on timber sales outside the State Forests. Within State Forests, additional standards could only be imposed if the DNR Commissioner makes a finding of compelling state interest.

Negotiated timber sales for local manufacture of wood products

Section 6 (AS 38.05.123(d) broadens the area where sales under this section may be offered. Currently offerings are limited to areas "designated for forestry uses" by an area plan, to areas where forestry is an allowed use. This would allow this sale type in areas that have more general designations such as "Resource Management" or "General Use". Review of proposed sales through the FYSTS and FLUP processes would continue to ensure that proposed sales are compatible with the management intent for the particular location.

Section 7 (AS 38.05.123(j)) makes the definition of "high-value added wood product" more flexible. The current definition is a list of specific products that qualify. Other products can only be added by regulation. New products are developed every year, and the regulatory process is an inefficient means to determine whether these products qualify as "high-value added". This amendment makes the statute more responsive to market and processing changes by allowing the DNR Commissioner to determine whether a product not on the existing list has received sufficient processing to qualify as a "high value-added wood product". At a minimum, a product must be processed beyond sawing and planing to qualify.

This amendment also

- adds dissolving pulp to the list of high value-added products,
- allows the use of any species in engineered products and paneled wood products, rather than only allowing hardwoods, and
- clarifies that drying must be kiln-drying to qualify as a high value-added process.

For "value-added wood products", this section

- deletes pulp and paneled wood products because they are moved to the high value-added category,
- adds "flitches" (cants milled on four sides), and
- allows the Commissioner to determine what additional products qualify as "value-added wood products".

ALASKA BOREAL FOREST COUNCIL

Sustaining our partnership with the land

Community
Ecology
Economy

May 16, 2003

TO: House Resources Committee Members
From: Jan Dawe, Ph.D. and Director, Alaska Boreal Forest Council
Re: Preferred wording for primary use of state forests, in CSSB 149(RES)

Dear House Resource Committee Members,

In your packet you have several documents from the Alaska Boreal Forest Council. This letter provides you results to our email question responses to preferred wording for state forests:

From Natural Resource Professionals (pages 1-2)
From Members of General Public (page 2)

** from Natural Resource Professonals:

1. Edmond C. Packee, Sr., Ph.D.; Certified Forester, Certified Professional Soil Scientist, Professional Forester, Member of the Soaciety of Forsters,
preferred option is to revise the change proposed in CSSB 149(RES) as follows:

"The primary purpose in the establishment of state forests is timber management that provides for the production, utilization, and replenishment of timber resources while allowing other beneficial, multiple uses of public land and resources."

[Note: On phone, Ed said (paraphrased by jan dawe): " I buy into this 100%. I believe, after just spending 3 days in SE forest stands, that I understand much more about this piece of legislation than I did before. From my understanding, industry is willing to buy that one word change to the primary purpose."]

2. Carol E. Lewis, Ph.D. and MBA, Dean, School of Natural Resources and Agricultural Sciences and Director, Agricultural and Forestry Experimental Station, University of Alaska Fairbanks, supports the above single-word revision of the CSSB 149(RES) wording.

3. Bob Ott: private forester
prefers option 2 only because it limits primary use to forest products. Option 1 is multiple use (of commercial ventures), which may be too close to the original wording.

4. Bob Ritchie: consultant (wildlife biologist) working regularly in the Tanana Valley State Forest:
Prefers the existing state statute describes the primary purpose in the establishment of state forests as follows: "The primary purpose in the establishment of state forests is multiple use management that provides for the production, utilization, and replenishment of timber resources while perpetuating personal, commercial, and other beneficial uses of resources."

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[Note: From Bob's email: "This is the only way our forests should be manage: multiple uses, representing needs of all of the public."]

5. **Audrey Magoun: Natural Resource Professional**, private consulting firm = Wildlife Research and Management (WRAM), **prefer Option 1 but I think Option 2 probably has a better chance of passing** and I wouldn't mind it if it stated "forest management" instead of timber management. Personally, I don't see how the legislature can remove "multiple use" from the primary purpose since it is woven throughout other state statutes and already allows for preferential use of timber if it best meets the present and future needs of the people of Alaska. See below. CSSB 149 presents the possibility that commercial interests could argue that timber production, utilization, and replenishment override the present and future needs for other uses of the people of Alaska on our state forests and that use of the state forest cannot be adjusted for changing needs and conditions--in other words, even if greater economic or commercial gain could be made from the state forests that conflicts with any timber use being currently conducted, the people of Alaska could be denied that gain--even this current legislature wouldn't want that, I'm sure.

** Members of the General Public:

6. **Kimberley Maher** (SNRAS/UAF graduate student): **option 2**

7. **Joanne Groves**, works at the University of Alaska Fairbanks): **Option 1**

8, **haron Alden**, Board of Directors, Alaska Boreal Forest Council,
The existing state statute is my choice followed by Option 1.
The existing state statute language covers the timber harvesting adequately without sacrificing the other uses of the Tanana Valley Forest. By putting the timber harvesting first there is a greater danger of damage to the other uses.

9. **Arthur Hussey**, Executive Director, Northern Alaska Environmental Center,
option 2: gives more specificity and detail.

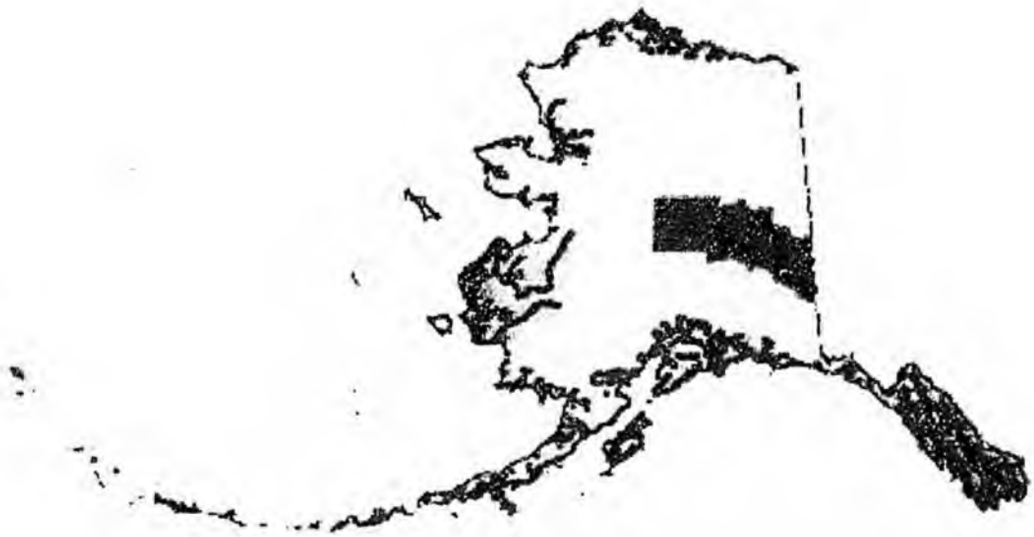
10. **Richard McCaffrey**, Alaska Boreal Forest Council staff, **Option 2**, but would prefer different stating: "The primary purpose in the establishment of state forest is to sustain public land and forest resources by providing for the management of the forest's timber and non-timber products, and its other uses, values and benefits."(A very brief version might simply end with a period after "resources", or a slightly longer form might end after "non-timber products", and still work for me)

11. **Deidre Helferrich**: Managing Editor, School of Natural Resources and Agricultural Sciences SNRAS/AFES Publications Office

Prefers this reformulation: "The primary purpose in the establishment of state forests is multiple-use management that provides for production, utiliztion, and replenishment of forest resources while providing for other multiple uses of public land and resources."

An Abstract of Non-timber Forest Products and Activities From

The Tanana Valley Forest Use Survey 1999 - 2000



A collaborative project of

The Alaska Boreal Forest Council
The Alaska State Division of Forestry
The University of Alaska Fairbanks

The Tanana Valley Forest Use Survey: How households used the forest in the Tanana River Watershed from September 1999 to August 2000

A collaborative project of the University of Alaska Fairbanks, Alaska State Division of Forestry and the Alaska Boreal Forest Council.

by
Scott Bates,
M.S., Resource and Applied Economics

Submitted to the University of Alaska Fairbanks, School of Management, Department of Economics as a project for partial fulfillment of the requirements of the Master of Science Degree in Resource and Applied Economics

Submitted: September 2002

Accepted: September 2002

PREFACE

The purpose of this document is to report abstracted results from the Tanana Valley Forest Use Survey. The aim is to summarize the personal use harvest of selected non-timber forest products in the Tanana Valley by Tanana Valley households.

The subject matter of the survey has generated a great deal of interest. Presentations have been made to the Alaska State Board of Forestry and at the state Division of Forestry's annual resources meeting. A request from the Fairbanks North Star Borough for a breakdown of harvest and recreation data for the region of the Tanana Basin covered by the Borough has been received and requests for copies of the finalized report have been requested by employees from the Alaska Department of Fish and Game. A poster presentation was made at the first Alaska Non-Timber Forest Products Conference in Anchorage, Alaska in November 2001. This interest in the survey results suggests that the Forest Use Survey can become an important tool for land and natural resource managers who seek to make the most informed decisions possible. It will also serve as a tool for community members who desire to participate in the decision making process in an informed way.

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Executive Summary

The Tanana Valley Forest Use Survey is aimed at creating a complete inventory of how households in the Tanana River Watershed use the natural resources around them. While much attention has been focused on hunting and fishing activities of Alaskan sportsmen and upon subsistence pursuits of Alaska Natives, general household use has not been looked at in depth so far. The survey collected data about what households harvested in the Tanana River Watershed. The area in question contains most of the Tanana Watershed and is approximately the size of the state of Pennsylvania.

The purpose of the Forest Use Survey is to provide information about natural resource use so that land and resource managers can understand the impacts of their management activities. Policy makers can understand potential conflicts that may arise from new and old policies. Community members who wish to be involved in the decision making process in an informed way will benefit from this data as well.

An important aspect of this project is that it is a collaborative project involving the state Division of Forestry, the University of Alaska and the Alaska Boreal Forest Council. A project of this nature could not be accomplished without such varied interests being involved. Collaboration can bring a very strong set of tools to such a varied project as this.

To gather the information necessary to fulfill the goals of the survey 1000 households in the Tanana Valley received a survey. Twelve percent of the surveys were returned as undeliverable. Of the surveys that were deliverable 474, or 54%, were filled out and returned. The respondents reported many activities such as harvesting moose, house logs and berries. They also reported collecting things like birch sap, diamond willow sticks and artist's conks. Data was also collected regarding recreational pursuits.

One way the data can aid in understanding the impacts that various activities have is to find values for those activities that are easily understood. For example, the data show that blueberry harvesting is very important in the Tanana Valley. Thirty-five percent of all households that responded reported picking an average of just over two gallons of blueberries. The potential harvest of blueberries is a total of 112,182 quarts for all households in the Tanana Valley. To purchase 112,182 quarts of blueberries in the year following the survey would have cost approximately $1.78 million. Clearly the blueberry harvest may need to be considered when land and resource policies are considered. This survey provides this type of information about other uses as well.

Introduction:

The Forest Use Survey (FUS) is a collaborative project involving the Alaska Boreal Forest Council, the University of Alaska Fairbanks School of Management (SOM), UAF Agricultural and Forestry Experiment Station, UAF School of Agriculture and Land Resource Management (SALRM), and the Alaska Department of Natural Resources, Division of Forestry.

The FUS is an unprecedented attempt to inventory the ways in which households use the forest in the Tanana Basin. Collecting knowledge of the many, varied ways in which the forest is used can allow for more informed decision-making when land use and/or resource management is in question. A smaller attempt was made by The Alaska Department of Fish and Game to find out how households in the upper Tanana Valley use certain areas, but did not go into the depth that the present survey does The FUS is part of a larger project called "Who's Who in the Woods" which is gathering information about how the forest is used, by whom and for what purposes. As "Who's Who" endeavors to bring together information about all users of the forest from subsistence and personal use harvests to research and recreation, the FUS is the means by which we will find out about the household component of forest use.

The idea for the FUS came about at a time when there was a question of whether to substantially change management of Alaska State forests to significantly favor logging and mineral exploration. People wanted to know what other activities were happening in the forest before they could reasonably answer the logging and mineral question. However, detailed information about forest use was simply not available. Thus the FUS was designed as a comprehensive questionnaire about how households use the forest, what and how much they harvest, and what recreational activities they participate in. With detailed information about harvest quantities we can arrive at minimum values that can be compared to the value of logging.

The Tanana Valley Forest Use Survey:

The population from which we drew the sample for the Forest Use Survey is all households of the Tanana River drainage. The survey was mailed to 1000 households in the Tanana Valley. Approximately twelve percent of the surveys were undeliverable, reducing the sample population to 878. Ultimately 474 households responded after three mailings, resulting in a response rate of 54%. This response rate is sufficient to give us a 95% confidence level in the data. Table 1 summarizes the survey response.

Table 1: Forest Use Survey sample summary

Original Sample Size	1000
Number of respondents	474
Number of undeliverable	122
Adjusted sample size	878
Response rate	54.0%

Harvest data for six categories of food and other types of uses were collected:

1. Fishing
2. Harvest of tree products
3. Gathering of forest floor products
4. Hunting
5. Trapping
6. Recreation

On the basis of household size our sample matches the 2000 census figures for the Tanana Basin very closely at 2.78 persons per household in the sample and 2.8 per household in the census. When individual characteristics are considered, though, we appear to have greatly under-sampled the 20 to 30 age group as well as females and to have over sampled the middle age groups and males

Some validation of the sample is gained from a comparison of the estimated harvest of big game animals from the FUS sample to the harvest reported to ADF&G by hunters. We were able to compare the harvest of moose, black bear, brown bear, caribou and dall sheep. The survey estimates of the percentage of households that harvested big game are well within one standard deviation of the mean, while moose are barely within two standard deviations. Even though moose is far out from the mean, we can still say with 95% confidence that the percentage of the population of households that harvested moose is within 5% of the estimate. Since we were so close on the other species it seems reasonable to place confidence in the estimates from the other sections of the survey.

Section III of the survey dealt with the harvest for personal use of wood products, both timber and non-timber. Here the valuation was constrained to calculating replacement values. In order to ascertain timber prices, lumber mill in the Fairbanks area were queried. Prices for the other non-timber items were collected as possible from published sources such as ads in the Fairbanks Daily News-Miner. Table 2 summarizes those replacement values that we could find. Not all of the products reported in the survey are amenable to this method however; such items are those that may not be purchased in a store if a harvest attempt fails and thus were not valued in this project. Table 3 summarizes those items harvested, but not valued.

Table 2—Estimated potential personal use harvest and replacement cost for wood products harvested in the Tanana Basin

Wood Product Type	Potential TV Harvest Quantity	Average Unit Cost	Replacement Value of Potential Harvest
House Logs	12,818 logs	$33.60 per log	$430,685
Saw Logs	52,722 logs	$37.20 per log	$1,961,258
Firewood	47,748 cords	$109.33 per cord	$5,220,289
Spruce Burls	4756 burls	$6.00 per foot (raw)	$28,536
Diamond Willow	20,718 sticks	$10.50 per stick (raw)	$217,539
TOTAL			$7,858,307.00

While the simple replacement values cannot begin to place actual values on the harvest activities of Tanana Basin households, they can provide basic minimum values to provide a baseline for comparison. It must always be noted that the values people receive from their harvest will certainly include things that do not directly flow from the harvest. Time spent with family and friends, enjoyment of outdoor activities or a sense of self sufficiency are examples of valuable things which cannot be estimated by comparing the price of a thing in the store to the amounts that were harvested. It seems very likely that we could find that some people are just as happy to attempt harvesting blueberries and then buy blueberries in the store if the attempt fails, as they are if they have a successful harvest.

Table 3—Wood also harvested for personal use, but not valued

Wood Product Type	Potential Harvest	
Pole Logs	30,956	Logs
Cones	1612	Bushels
Spruce Roots	887	Pieces
Birch Bark	16,929	Pieces
Conk or Punk	4192	Each
Christmas Trees	4514	Each
Birch Sap	36,317	Gallons

Section IV of the survey asked respondents about the harvest of non-wood items such as berries or mushrooms. Berries can be said to be a very important part of TV residents gathering activities. One third of all respondents reported picking blueberries. Prices were determined by querying produce managers at both Safeway and Fred Meyer in Fairbanks. Table 4 summarizes the replacement values of the potential harvest of berries picked for personal use by Tanana Valley households in the summer of 2000. Table 5 summarizes harvest the personal use items that could not be valued base upon the available information.

The final harvest portion of the survey is Section VI, which deals with trapping. Finding values for this area was relatively straightforward. Information from Alaska Department of Fish and Game about the prices Alaska trappers received for pelts in the 1999/2000 season were used to create the data in table 6

Table 4—Estimated potential personal use harvest and replacement values of the wild berry harvest in the Tanana Basin.

Wild Berries	Potential TV Harvest Quantity (quarts)	Average Unit Cost	Replacement Value of Potential Harvest
Blueberries	112,182	$15.94 per quart	$1,788,185
High-bush Cranberries	27,520	$5.98 per quart	$164,567
Low-bush Cranberries	75,555	$5.98 per quart	$451,821
Raspberries	88,998	$5.86 per quart	$521,527
Wild Strawberries	2942	$3.54 per quart	$10,416
TOTAL:	307,197		$2,936,516.00

Table 5--Non-wood also harvested, but not valued

Non-Wood Product Type	Potential Harvest	
Mushrooms	22,249	Pounds
Lichen	81	unknown
Medicinal Plants	2902	Pound
Plants for Landscaping	35,511	Each

Table 6—Potential harvest from trapping and estimated value of the furs to trappers in the Tanana Basin

Species	Potential Harvest	Average Price per animal pelt	Value of potential harvest
Marten	5079	$26.89	$136,574.31
Lynx	2338	$54.75	$128,005.50
Fox	1532	$31.97	$48,978.04
Mink	484	$13.14	$6,359.76
Beaver	484	$21.77	$10,536.68
Wolf	322	$213.75	$68,827.50
Wolverine	161	$233.75	$37,633.75
Muskrat	81	$1.47	$ 119.07
River Otter	81	$41.13	$3,331.53
Coyote	81	$22.17	$1,795.77
Ermine or Weasel	162	$4.00	$ 648.00
TOTAL:			$442,809.91

At this time we have not collected enough information to value the recreational activities of Tanana Valley households. However many activities were reported and are summarized in Table 7. We are currently unsure if the reported activities were the primary or secondary activities, thus we do not know how much of the wildlife viewing, for example, was done while hiking or driving, etc. A survey of Alaska Voters for ADF&G to find the values Alaskans place on wildlife viewing trips found that Interior Alaska registered voters placed a mean value on trips specifically meant to view wildlife at $408. The mean value placed on the wildlife viewing experience for trips primarily meant for a purpose other than wildlife viewing was $82.

We wanted to know how people characterize their use of the forest. Is their use primarily for subsistence or personal use or are the harvests used to supplement income or is recreation the primary use or is it some mix of some or all of these? In order to make respondents start thinking about the ways they use the forest, this question was asked as a warm-up to the survey. Respondents were free to choose as many options as they liked. Table 8 summarizes how respondents characterize their use of resources in the Tanana Valley, which we believe may be extrapolated to the general population. No inventory of land use would be complete without knowing how the users of the public lands feel about how those lands are managed. We gave respondents an opportunity to rate each of the government agencies with land management responsibilities in the Tanana River Watershed. How respondents rated these agencies is presented in table 9.

One question we asked that we present here was whether Tanana Valley residents would like to have a formal trail system in Alaska's Tanana Valley State Forest. A majority of respondents indicated they would prefer such a system of trails. The answers to this question are found in table 10. We wanted to know why our respondents live in the Tanana Valley. Note in table 11 that more than half of respondents answered each of the top five options. We can gain some intuition as to the most important properties from the information here. This survey question did not include the choices for University of Alaska and military. We realized, early in the data entry process, that these options should have been included and so added categories for them. Since four people said military here and 22 people listed military as occupation (see table 12 in full report,) we have to wonder whether more respondents would have given military as a reason they are here. The same may be true for the University of Alaska Fairbanks as well.

Table 7—Potential Time Spent in Recreational Activities

Activity	Potential Number of Days Spent in This Activity by Tanana Valley Residents
Air Boating	2996
ATV Riding	226,461
Backpacking	30,991
Bird Watching*	1,010,857
Camping	116,908
Catch and Release Fishing**	1997
Cross Country Skiing	200,032
Day Hiking	97,130
Dog Mushing	41,261
Down Hill Skiing	14,978
Leisure Driving	328,361
Flying Airplanes	26,835
Motor Boating	104,293
Mountain Biking	68,578
Non-motor Boating	16,599
Photography	342,521
Picnicking	17,719
Recreational Private Cabin Use	129,616
Recreational Public Cabin Use	7168
Rock Climbing	4434
Scenic Viewing*	1,709,279
Skijoring	109,651
Snow Machine Riding	182,718
Snow Shoeing	30,534
Target Shooting	63,303
Wildlife Viewing*	979,692

*Some respondents reporting these activities said they did them 365 days a year, so the estimates may overstate the potential by a great deal.

**Not all angler respondents who did catch and release fishing told us that their report was for catch and release, so this estimate is likely very low.

Table 8: Summary of how residents characterize their use of the Tanana Valley

	# of responses	% of households
For recreation purposes	393	82.9%
For home use	209	44.1%
For Subsistence purposes	123	25.9%
To supplement our income	47	9.9%
Do not use Tanana Valley	44	9.3%
Other	34	7.2%

Table 9: Ranking of government agency's management of public lands

	1 Poor	2 Fair	3 Good	4 Very Good	5 Excellent	Average
AK Dept. of Fish and Game	29	29	131	95	43	3.2
AK Div. Of Forestry	9	49	151	72	26	3.2
AK Div. Of Parks and Outdoor Recreation	15	47	157	82	36	3.2
Bureau of Land Management	55	78	109	44	17	2.6
US Fish and Wildlife Service	59	69	102	39	18	2.6
AK Div. Of Mining, Land and Water	33	55	114	35	12	2.8

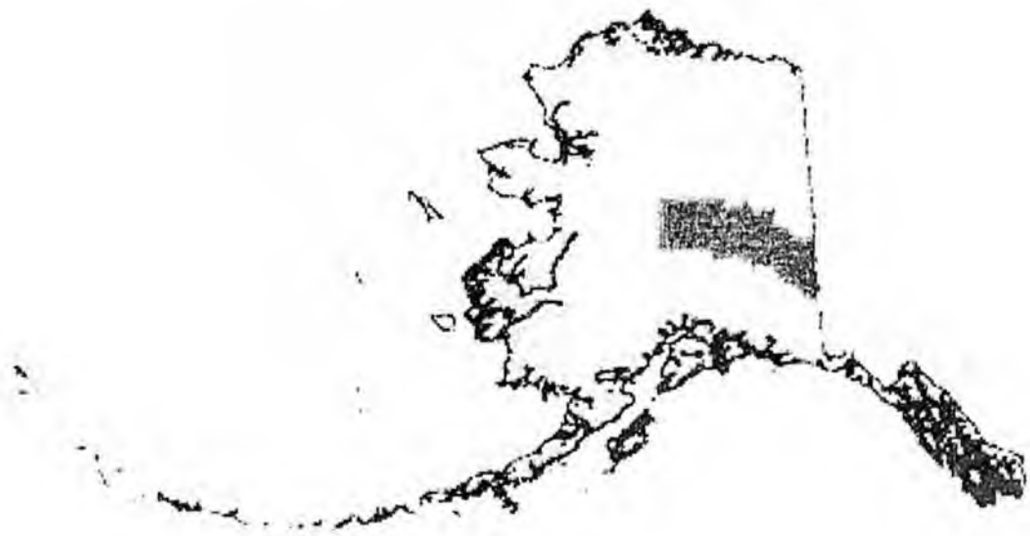
Table 10: Do you think the state forest should have a formal trail system?

Yes	207	43.7%
No	179	37.8%
No Answer	72	15.2%

Table 11: Why respondents live in the Tanana Valley?

For the natural beauty	283
For the freedom offered here	257
For a job	248
For the recreation opportunities	248
Because of the people and community here	241
For a good place to raise children	205
Because you have family here	142
Other	61
University of Alaska Fairbanks	7
Military	4

The Tanana Valley Forest Use Survey 1999 - 2000



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M.S. Resource and Applied Economics

Submitted to the University of Alaska Fairbanks, School of Management, Department of Economics as a project for partial fulfillment of the requirements of the Master of Science Degree in Resource and Applied Economics

Submitted: September 2002

Accepted: September 2002

PREFACE

The purpose of this document is to report the results of the Tanana Valley Forest Use Survey. Section 1 discusses the survey history and results. Section 2 summarizes general questions and the demographics of the survey. Sections 3 through 8 of this report summarize the harvest and recreation uses reported by respondents.

The subject matter of the survey has generated a great deal of interest. Presentations have been made to the Alaska State Board of Forestry and at the state Division of Forestry's annual resources meeting. A request from the Fairbanks North Star Borough for a breakdown of harvest and recreation data for the region of the Tanana Basin covered by the Borough has been received and requests for copies of the finalized report have been requested by employees from the Alaska Department of Fish and Game. A poster presentation was made at the first Alaska Non-Timber Forest Products Conference in Anchorage, Alaska in November 2001. This interest in the survey results suggests that the Forest Use Survey can become an important tool for land and natural resource managers who seek to make the most informed decisions possible. It will also serve as a tool for community members who desire to participate in the decision making process in an informed way.

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Executive Summary

The Tanana Valley Forest Use Survey is aimed at creating a complete inventory of how households in the Tanana River Watershed use the natural resources around them. While much attention has been focused on hunting and fishing activities of Alaskan sportsmen and upon subsistence pursuits of Alaska Natives, general household use has not been looked at in depth so far. The survey collected data about what households harvested in the Tanana River Watershed. The area in question contains most of the Tanana Watershed and is approximately the size of the state of Pennsylvania.

The purpose of the Forest Use Survey is to provide information about natural resource use so that land and resource managers can understand the impacts of their management activities. Policy makers can understand potential conflicts that may arise from new and old policies. Community members who wish to be involved in the decision making process in an informed way will benefit from this data as well.

An important aspect of this project is that it is a collaborative project involving the state Division of Forestry, the University of Alaska and the Alaska Boreal Forest Council. A project of this nature could not be accomplished without such varied interests being involved. Collaboration can bring a very strong set of tools to such a varied project as this.

To gather the information necessary to fulfill the goals of the survey 1000 households in the Tanana Valley received a survey. Twelve percent of the surveys were returned as undeliverable. Of the surveys that were deliverable 474, or 54%, were filled out and returned. The respondents reported many activities such as harvesting moose, house logs and berries. They also reported collecting things like birch sap, diamond willow sticks and artist's conks. Data was also collected regarding recreational pursuits.

One way the data can aid in understanding the impacts that various activities have is to find values for those activities that are easily understood. For example, the data show that blueberry harvesting is very important in the Tanana Valley. Thirty-five percent of all households that responded reported picking an average of just over two gallons of blueberries. The potential harvest of blueberries is a total of 112,182 quarts for all households in the Tanana Valley. To purchase 112,182 quarts of blueberries in the year following the survey would have cost approximately $1.78 million. Clearly the blueberry harvest may need to be considered when land and resource policies are considered. This survey provides this type of information about other uses as well.

SECTION I

Introduction

The Forest Use Survey (FUS) is a collaborative project involving the Alaska Boreal Forest Council, the University of Alaska Fairbanks School of Management (SOM), UAF Agricultural and Forestry Experiment Station, UAF School of Agriculture and Land Resource Management (SALRM), and the Alaska Department of Natural Resources, Division of Forestry.

The FUS is an unprecedented attempt to inventory the ways in which households use the forest in the Tanana Basin. Collecting knowledge of the many, varied ways in which the forest is used can allow for more informed decision-making when land use and/or resource management is in question. A smaller attempt was made by The Alaska Department of Fish and Game to find out how households in the upper Tanana Valley use certain areas (Marcotte, 1991), but did not go into the depth that the present survey does The FUS is part of a larger project called "Who's Who in the Woods" which is gathering information about how the forest is used, by whom and for what purposes. As "Who's Who" endeavors to bring together information about all users of the forest from subsistence and personal use harvests to research and recreation, the FUS is the means by which we will find out about the household component of forest use.

The idea for the FUS came about at a time when there was a question of whether to substantially change management of Alaska State forests to significantly favor logging and mineral exploration. People wanted to know what other activities were happening in the forest before they could reasonably answer the logging and mineral question. However, detailed information about forest use was simply not available. Thus the FUS was designed as a comprehensive questionnaire about how households use the forest, what and how much they harvest, and what recreational activities they participate in. With detailed information about harvest quantities we can arrive at minimum values that can be compared to the value of logging.

Methods

Instrument Design

In designing the FUS—the full survey instrument is included in Appendix H—we wanted to learn about several aspects of household forest use in addition to harvest quantities. First, we wanted to know how people characterize their use of the forest. Is their use primarily for subsistence or personal use or are the harvests used to supplement income or is recreation the primary use or is it a mix of some or all of these? In the present survey we allowed respondents to pick as many as applied to them. However, in future surveys it may be better to ask households to rank the various characterizations if they wish to answer more than one. We also wanted to know why they live in the Tanana Basin; is it for a job or the beauty of the place or family reasons? Most importantly, in

order to be sure we have an accurate picture of forest use by Tanana Basin households, we also needed to ask personal information such as age, gender, education level and income. With this demographic information we can compare our sample of respondents to the population at large.

The survey was broken down into eight parts:

I. Directions and the characterization question
II. Fishing
III. Harvest of tree products
IV. Gathering of forest floor products
V. Hunting
VI. Trapping
VII. Recreation
VIII. Personal data

In parts II through VII we attempted to provide as comprehensive a list as possible to ensure the highest level of completeness. This comprehensive list resulted in a rather imposing seeming survey. For example we provided spaces in part IV for blueberries, high-bush cranberries, low-bush cranberries, raspberries, rosehips, mushrooms, lichens, medicinal plants, plants for landscaping and spaces for other types of gatherable items not in the list. We provided a break between each section with simple check box questions. These questions included yes or no questions, a ranking question concerning how they rate various state and federal agencies, and the question regarding why they live in the Tanana Basin. Since we ultimately achieved a return rate of 54%, the completeness may have paid off in terms of jogging people's memories as some reported handfuls and mouthfuls of berries. Had there not been a space for blueberries, for example, we might not have heard about a handful of blueberries that was reported and this may also apply to some of the larger amounts that were reported as well.

In addition to the expertise in survey design provided by SOM and SALRM, a number of focus groups provided guidance as well. Focus groups are a useful tool for determining just what the target audience of the survey will tolerate. Additionally focus groups can help to point out missing questions that ask for important information or questions that are meaningless. Using groups can generate a creative synergy that isn't possible through simple instrument pre-testing (Greenbaum, 1988).

Sampling and Mailing Procedure

The sampling unit for this survey was the household. A random sample of 1000 households was drawn according to the zip codes that encompass the Tanana River Watershed. The survey procedure was designed roughly according to accepted techniques (Salant and Dillman, 1994). Four mailings were used:

1st mailing—Full Survey, including Alaskan Wild Berry Tea bags and a sample Birch Syrup Stick (FN)
2nd mailing—Thank You/Reminder postcards
3rd mailing—Full Survey
4th mailing—Full Survey

The first mailing went out in late September in order to follow the heaviest period of harvest, the summer months. Including Alaska made non-timber forest products was intended to be an incentive to complete the survey. However, the power of postal machinery to break open the syrup sticks was not considered. Many of the sticks broke open in transit making the survey difficult or impossible to fill out. It is not known how many of the syrup sticks broke in the mail nor how much the response rate may have suffered. Approximately 12% of the surveys were returned as being undeliverable . Ultimately 474 households responded after three mailings, resulting in a response rate of 54%. This response rate is sufficient to give us a 95% confidence level in the data.

Database Design

Currently the forest use data reside in Microsoft Excel spreadsheets linked to Microsoft Access forms for data entry. Problems arose from the extensive information that we asked for in the survey. Each specific item we asked about—trout for example—has thirty-one variables: one for quantity, four seasonal variables, five variables for how the harvest area was reached (e.g. by paved road, by trail or by air) and twenty-one variables for where in the Tanana Basin that the harvest took place. With so many variables, we were unable to contemplate using only one spreadsheet for storing our data. Neither Excel or Access are able to have more than 255 variables in a single table, a number which is quickly eclipsed by the number of variables in a single section of the survey; the gathering section alone has 434 (14 x 31) data points.

The request for data from the FNSB pointed out problems with our ability to query the database. The Borough was only interested in certain areas of the map that we asked about. Ideally we would query the database about which activities occurred only in those specific areas. Unfortunately at this time the relationships between data items are not clearly defined and such a query was not possible. Work continues to bring the data into a relational database that will allow easy querying of the dataset. Data entry is essentially complete. Though some minor interpretation problems remain, these will not substantially affect analysis of the data set.

Sample Validity

From our demographic data it appears that our sample may be very close to statistically representative of the Tanana Basin population, though some discrepancies need to be addressed. On the basis of household size our sample matches the 2000 census figures for the Tanana Basin very closely at 2.78 persons per household in the sample and

2.8 per household in the census. When individual characteristics are considered, though, we appear to have greatly under-sampled the 20 to 30 age group as well as females and to have over sampled the middle age groups and males. Thus we may be able to have more confidence in the harvest data due to its household nature than in the recreation data that are based on the experience of the person who filled out the survey.

Some validation of the sample is gained from a comparison of the estimated harvest of big game animals from the FUS sample to the harvest reported to ADF&G by hunters. We were able to compare the harvest of moose, black bear, brown bear, caribou and dall sheep. The survey estimates of the percentage of households that harvested big game are well within one standard deviation of the mean, while moose are barely within two standard deviations. Even though moose is far out from the mean, we can still say with 95% confidence that the percentage of the population of households that harvested moose is within 5% of the estimate. Since we were so close on the other species it seems reasonable to place confidence in the estimates from the other sections of the survey. Table 1 summarizes the comparisons.

Table 1—Summary of comparison of FUS sample to ADF&G reports

Species	Percent of sample households reporting	Percent of Tanana Valley households	Difference	One Standard Deviation
Moose	12.24%	15.24%	0.300	0.1505
Caribou	1.26%	0.99%	0.27	0.51
Black Bear	1.89%	2.31%	0.41	0.62
Brown/Grizzly	0.21%	0.28%	0.07	0.21
Dall Sheep	0.84%	0.86%	0.02	0.42

Valuation Analysis

Valuation Methods

Some of the valuation analysis from this first survey must be confined to simple replacement values for much of the harvest. Because of the comprehensive nature of this first survey, respondents were not asked how much time was spent in their harvest pursuits. Nor were they asked whether they seek substitutes if their original harvest attempts are unsuccessful. For example, what do households do to make up for a failed moose hunt or a bad blueberry season? Another datum that would have been useful was how far they traveled to conduct the harvest. Therefore, some of the data collected in the harvesting and gathering sections have been valued according to what it would have cost had these items been purchased in Fairbanks, Alaska. Other items from those sections simply cannot be valued from the current data as they are not available for purchase, but must be gathered from the wild.

In finding values for the items harvested in the Tanana Basin, different types of values have necessarily been used. Ideally, we would use one type of valuation for all

items in order to find the range of values for each. Replacement values are easily understood and since we are limited to these values for some items it would have been ideal to use them for all items. Unfortunately we are not able to readily determine replacement values for the harvest from hunting or fishing. For example we cannot go to the supermarket and buy moose meat if our moose hunt comes up empty; nor is there a readily identifiable substitute for moose meat. This goes for all of the fish and game species that respondents reported. Thus for the purposes of this report net economic values (NEV) were used for the valuation of fish and game. Net economic values measure the amount of money that hunters and anglers would have been willing to pay above the actual costs they incurred on their respective trips. These values come closer to capturing the recreational value that these respondents received from their efforts. It is important to remember that having used the different values we are looking at different aspects of the demand for harvesting natural resources.

The Alaska Department of Fish and Game has done much work that can help to place values on the harvest reported in the hunting, fishing and trapping sections. Every year F&G conducts surveys about sport fishing and subsistence harvest. Big game hunters are asked to submit information about their hunting trips. Work to find net economic values of sport harvests have aided in the valuation of the harvest in this project. Additionally, work to find replacement values for the subsistence harvest have been helpful as well.

Valuing the Fish Harvest

Fishing as reported in Section II is a very important part of harvesting pursuits in the Tanana Basin. The numbers reported here are problematic since an option to report fish that were caught and released was not offered. Thus the numbers are likely inflated due to released fish being reported and counted as harvested. The number of fish do exceed the number of fish reported in F&G's 2000 Sport Fish Survey (ADF&G, 2000) by half again as much to over 10 times depending upon the species when adjusted to exclude subsistence use as shown in Table 2.

Table 2—Comparison of sample fish harvest estimate to ADF&G estimates

Species	Estimated Total for Tanana Basin	Adjusted to Exclude Subs	Fish and Game Sport Estimate
Trout	116,971	77,551	54,832
Salmon	298,352	59,493	17,529
Pike	43,612	18,461	3467
Grayling	135,351	111,490	8560
Burbot	19,428	12,415	3740
Sheefish	9351	564	220
Whitefish	52,722	4353	385

The present data set does not provide enough information to know whether we are seeing a large catch and release incidence or if quantities were misread or were misreported. The survey gave respondents the option to report in number of fish or in pounds. In data entry it was assumed that a number without some indication to indicate pounds, such as lbs. or #, was meant to report number of fish. Therefore the number may be inflated when, say, 100 pounds was actually counted as number of fish. Another problem encountered was that some reports were in pounds while others were in number of fish, which made tallying total number of fish difficult. Some respondents reported both pieces of data and the averages from these numbers were used to convert form pounds to quantity.

Placing a value on the fish harvest must be considered in light of the fact that there is a sport fish harvest and a subsistence harvest. These activities lie upon a continuum that runs from fishing purely for recreation to fishing purely for food. Thus placing values on the harvest is far from simple. In 1997 three surveys of sport fishers were conducted by the Department of Fish and Game that developed net economic values for trout, salmon, pike, grayling and burbot (Duffield, et al 2001a, 2001b, 2001c). These surveys cover a larger area than does the FUS as it covers most of Region III, however the investigators divided the region and derived values for an area which excludes the Seward Peninsula and the Copper River drainage leaving an area where the bulk of the population resides in the FUS area.

Using the net economic values (NEV) from Duffield, et al, values have been estimated for those fish species in the FUS that coincide with their study. Whitefish and sheefish were not included in that other study. More than half of the respondents reporting these two fish reported their use of them as subsistence. Estimates for the value of all fish caught were calculated based on the potential harvest determined from the FUS data as well as from the F&G estimates in order to provide a range of values.

Table 3—Estimated net economic value of the sport fish harvest in the Tanana Basin

Species	NEV for anglers	Estimated total value for Tanana Basin from FUS	Estimated total value for Tanana Basin from F&G
Trout	$377.88	$29,304.431	$20,719,916
Salmon	$79.94	$4,755,946	$1,417,256
Pike	$251.92	$4,650,530	$873,407
Grayling	$211.43	$23,572,673	$1,809,841
Burbot	$508.83	$6,254,861	$1,903,024
Sheefish	$286.00	$161,304	$62,920
Whitefish	$286.00	$1,244,958	$110,110
TOTAL:		$69,944,703.00	$26,896,474

Valuing the Harvest of Wood Products

Section III dealt with the harvest of wood products, both timber and non-timber. Here the valuation was constrained to calculating replacement values. Not all of the products are amenable to this method however. Birch bark, cones, spruce roots and shelf fungi were asked about and quantities reported. These are not items one may purchase in a store if a harvest attempt fails and thus were not valued in this project. Pole logs are another item that cannot be reasonably valued based on the amount of data collected. They might be likened to 2x4 or 4x4 lumber as one use might be to build a fish wheel if one is looking at possible subsistence uses or sheds on ones property in personal use. In order to ascertain timber prices, lumber mill in the Fairbanks area were queried. Prices for the other non-timber items were collected as possible from published sources such as ads in the Fairbanks Daily News-Miner.

Table 4—Estimated potential harvest and replacement cost for wood products harvested in the Tanana Basin

Wood Product Type	Potential TV Harvest Quantity	Average Unit Cost	Replacement Value of Potential Harvest
House Logs	12,818 logs	$33.60 per log	$430,685
Saw Logs	52,722 logs	$37.20 per log	$1,961,258
Firewood	47,748 cords	$109.33 per cord	$5,220,289
Spruce Burls	4756 burls	$6.00 per foot (raw)	$28,536
Diamond Willow	20,718 sticks	$10.50 per stick (raw)	$217,539
TOTAL			$7,858,307.00

Table 5—Wood also harvested, but not valued

Wood Product Type	Potential Harvest	
Pole Logs	30,956	Logs
Cones	1612	Bushels
Spruce Roots	887	Pieces
Birch Bark	16,929	Pieces
Conk or Punk	4192	Each
Christmas Trees	4514	Each
Birch Sap	36,317	Gallons

While the simple replacement values cannot begin to place actual values on the harvest activities of Tanana Basin households, they can provide basic minimum values to provide a baseline for comparison. It must always be noted that the values people receive from their harvest will certainly include things that do not directly flow from the harvest. Time spent with family and friends, enjoyment of outdoor activities or a sense of self sufficiency are examples of valuable things which cannot be estimated by comparing the price of a thing in the store to the amounts that were harvested. It seems very likely that we could find that some people are just as happy to attempt harvesting blueberries and

then buy blueberries in the store if the attempt fails, as they are if they have a successful harvest.

Valuing the Harvest of Non-wood Vegetation

Section IV of the survey asked respondents about the harvest of non-wood items such as berries or mushrooms. Berries can be said to be a very important part of TV residents gathering activities. One third of all respondents reported picking blueberries. Prices were determined by querying produce managers at both Safeway and Fred Meyer in Fairbanks. Because of the buying power of these two chains these average values may be viewed as minimum values. Additionally, some of the wild berries and rosehips are purchased by local makers of jams and syrups. Table 6 provides values for the sale of these items, but these values must be viewed in light of the fact that not all of the harvested items would be of suitable quality to be sold.

Table 6—Potential wholesale value of wild berry harvest in the Tanana Basin

Wild Berries and other fruits from shrubs	Potential TV Harvest Quantity (approx. lbs.)	Purchase Price	Value of Potential Harvest Sales
Blueberries	149,576	$4.00 per pound	$598,304.00
High-bush Cranberries	27,520	$2.50 per pound	$68,800.00
Low-bush Cranberries	75,555	$2.50 per pound	$188,887.50
Raspberries	142,396	$3.00 per pound	$427,188.00
Rosehips	10,512	$2.50 per pound	$26,280.00
TOTAL:	310,825		$1,309,459.50

Table 7—Estimated potential harvest and replacement values of the wild berry harvest in the Tanana Basin.

Wild Berries	Potential TV Harvest Quantity (quarts)	Average Unit Cost	Replacement Value of Potential Harvest
Blueberries	112,182	$15.94 per quart	$1,788,185
High-bush Cranberries	27,520	$5.98 per quart	$164,567
Low-bush Cranberries	75,555	$5.98 per quart	$451,821
Raspberries	88,998	$5.86 per quart	$521,527
Wild Strawberries	2942	$3.54 per quart	$10,416
TOTAL:	307,197		$2,936,516.00

Valuing the Harvest from Hunting

Section V asked about hunting in the Tanana Basin. As with fish we are able to obtain harvest estimates from ADF&G to help with the valuation of harvesting game animals. McCollum and Miller (1994a) estimated net economic values for big game

animals as well as for waterfowl. This study calculates values for Alaska hunters across five basic regions of the state. Their interior region includes the Game Management Units that lie within the FUS area as well as several to the north and to the west. As with the fish studies above, the bulk of the population for the hunter NEV study resides in the area also considered by the FUS.

Table 8—Non-wood also gathered, but not valued

Non-Wood Product Type	Potential Harvest	
Mushrooms	22,249	Pounds
Lichen	81	unknown
Medicinal Plants	2902	Pound
Plants for Landscaping	35,511	Each

Snowshoe hare, ptarmigan and grouse were not asked about in the McCollum study though they are taken in high numbers with respect to the other types of game. Valuing the harvest of these three animals would benefit from more knowledge of hunter effort and substitutes. Since this information is not currently available from the FUS data valuing these animals will be ignored for now. Table 9 summarizes the net economic values for the other game animals in the FUS. Wolf hunting had only one respondent reporting a value which happened to be the maximum value offered by the investigators. So to more accurately offer a value for wolf hunting

Table 9—Potential harvest from the hunt and the estimated net economic value to hunters in the Tanana Basin.

Species	Potential Harvest	NEV	NEV of Potential Harvest
Moose	4837	$242.71	$1,173,988.27
Caribou	484	$194.12	$93,954.08
Black Bear	726	$226.39	$164,359.14
Brown/Grizzly Bear	81	$188.26	$15,249.06
Dall Sheep	322	$113.95	$36,691.90
Wolf	81	$193.11	$15,641.91
Waterfowl	20,557	$188.95	$3,884,245.15
TOTAL:			$5,368,568.60

Table 10—Also hunted, but not valued

Species	Potential Harvest
Snowshoe Hares	15,155 *
Ptarmigan	38,372
Grouse	55,543
*Includes estimated 9593 hares harvested by trapping, the only reported animal trapped for which there is not a value as fur.	

Valuing the Harvest from Trapping

The final harvest portion of the survey is Section VI, which deals with trapping. Finding values for this area was relatively straightforward. Here again data from ADF&G come into play. Periodically Alaskan trappers are surveyed by mail to determine the characteristics of fur trapping in Alaska. In the Trapper Survey report are found the average prices paid for pelts during the period of this survey. These prices are used in the calculations here. (It should be noted, however, that a small portion of the harvest reported here was not sold and may coincide with subsistence use.)

Valuing the Subsistence Harvest

Valuing the subsistence portion of the survey results presents a challenge also. Work by Robert Wolf (1996), an anthropologist with the Subsistence Division of ADF&G has presented estimates that tally replacement values based on $3.00 per pound and on $5.00 per pound. His calculations take into account the total number of pounds of all items harvested. Table 12 summarizes Wolf's calculations for Interior Alaska in 1990. Having calculated replacement values for the harvest of wood and non-wood items on an item for item basis, the food or shelter values have been calculated already. McCollum's (1994a) net economic values for hunting were based on answers to a survey to all hunters including Alaska Natives. Thus the hunting values should be inclusive of the subsistence value. The values calculated for the trapping harvest should be viewed as minimum values since adding value to the furs by making clothing would exceed these values. Since some respondents reported fish in both pounds and quantity we can calculate some rough replacement values in this category. These values are summarized in table 13.

Table 11—Potential harvest from trapping and estimated value of the furs to trappers in the Tanana Basin

Species	Potential Harvest	Average Price per animal pelt	Value of potential harvest
Marten	5079	$26.89	$136,574.31
Lynx	2338	$54.75	$128,005.50
Fox	1532	$31.97	$48,978.04
Mink	484	$13.14	$6,359.76
Beaver	484	$21.77	$10,536.68
Wolf	322	$213.75	$68,827.50
Wolverine	161	$233.75	$37,633.75
Muskrat	81	$1.47	$ 119.07
River Otter	81	$41.13	$3,331.53
Coyote	81	$22.17	$1,795.77
Ermine or Weasel	162	$4.00	$ 648.00
TOTAL:			$442,809.91

Table 12—Summary of Interior Alaska Subsistence Harvest and Replacement Value

Area	1990 Population	Pounds Per Capita	Total Pounds Harvested	Replacement at $3 per pound	Replacement at $5 per pound
Fairbanks/ Delta area	81,728	16	1,307,648	$3,922,944	$6,538,240
Interior	10,383	613	6,359,597	$19,078,791	$31,797,985

Table 13—Estimation of Subsistence Fish Replacement Values

Species	Estimated Number of Subsistence Fish	Estimated Pounds of Subsistence Fish	Replacement at $3 per pound	Replacement at $5 per pound
Trout	39,706	55,588	$166,765	$277,942
Salmon	235,873	15,567,763	$4,670,292	$7,783,820
Pike	24,761	103,995	$311,985	$519,975
Grayling	23,752	28,502	$85,507	$142,512
Burbot	6981	6981	$20,943	$34,906
Whitefish	49,128	49,128	$147,385	$245,642
Sheefish	9371	9371	$28,114	$46,856
TOTAL	389,572	15,755,848	$5,430,991	$9,051,653

*Burbot, whitefish and sheefish were not reported with both values. To achieve minimum values, one pound per fish is used, which is certainly less than typical weight.

Recreation

At this time we have not collected enough information to value the recreational activities of Tanana Valley households. Many activities were reported and are summarized in Table 14. However, the questions were aimed at the individual who filled out the survey and not the household. Since we are not as certain that our sample of respondents is truly representative of the population of adults in the Tanana Basin we cannot be as certain of estimates from this section of the FUS. One important omission from this section was a question aimed at determining if the reported activities were the primary or secondary activity. Thus we do not know how much of the wildlife viewing, for example, was done while hiking or driving, etc.

McCollum (1994b) conducted a survey of Alaska Voters to find net economic values for wildlife viewing trips. Interior Alaska registered voters placed a mean value on trips specifically meant to view wildlife at $408. The mean value placed on the wildlife viewing experience for trips primarily meant for a purpose other than wildlife viewing was $82. While these numbers are interesting they are not useful to us in placing values until we are able to differentiate between primary and secondary pursuits. Still they do indicate the importance of wildlife to Alaskans.

Recommendations for the 2002 Forest Use Survey Design

In order to create a set of time series data, the second survey should collect the same information as did the first survey. The harvest quantity information is valuable by itself as a resource use indicator. However ADF&G collects a large amount of hunting and fishing information and the new survey should aim to augment that data rather than repeat it. Trimming the size of the hunting and fishing sections could allow for more in depth data to be collected in the other sections. Additionally, we may want to ask how many trips are made to participate in activities rather than when the harvest is made; we know generally when salmon runs occur or when the berries are ready for harvesting.

It is important to acquire data that will lead to more meaningful valuation estimates. There are a variety of methods that may be used to obtain these. Among the possibilities are the Travel Cost Method whereby respondents reveal information about how far they traveled, etc. and estimates are calculated based on how much a trip to make the harvest would cost. TCM may not be terribly appropriate here as there are multiple destinations and multiple activities. The Contingent Valuation Method would pose a hypothetical situation to test a harvester's willingness to pay, perhaps for greater access to harvest potential or activity possibilities, or to test willingness to accept less access.

Table 14—Potential Time Spent in Recreational Activities

Activity	Potential Number of Days Spent in This Activity by Tanana Valley Residents
Air Boating	2996
ATV Riding	226,461
Backpacking	30,991
Bird Watching*	1,010,857
Camping	116,908
Catch and Release Fishing**	1997
Cross Country Skiing	200,032
Day Hiking	97,130
Dog Mushing	41,261
Down Hill Skiing	14,978
Leisure Driving	328,361
Flying Airplanes	26,835
Motor Boating	104,293
Mountain Biking	68,578
Non-motor Boating	16,599
Photography	342,521
Picnicking	17,719
Recreational Private Cabin Use	129,616
Recreational Public Cabin Use	7168
Rock Climbing	4434
Scenic Viewing*	1,709,279
Skijoring	109,651
Snow Machine Riding	182,718
Snow Shoeing	30,534
Target Shooting	63,303
Wildlife Viewing*	979,692

*Some respondents reporting these activities said they did them 365 days a year, so the estimates may overstate the potential by a great deal.
**Not all angler respondents who did catch and release fishing told us that their report was for catch and release, so this estimate is likely very low.

A survey that is as easy to fill out as possible is also important. The first instrument tried to do this by presenting as comprehensive as possible a list of harvestable and recreational pursuits. However, space was provided for handwritten answers, which has provided some of the interpretation problems we have experienced. Check boxes for responses may provide more readable answers and therefore be more easily entered into the database. Another problem with handwritten answers was that respondents were allowed to provide, or not provide as the case may be, their own units of measure. The largest cause of interpretation problems has been the lack of a set unit of measure. For example, birch bark has proven to have a number of ways in which it can be

reported from pieces and rings to square feet to pounds. The next iteration of the survey should specify the units that can be reported.

Some additional information about how respondents would characterize the quality of the harvest will also be desirable. A question about how this years harvest compares to last year's harvest, or to the harvest 5 and 10 years ago. We might also want to ask questions that relate the level of harvest to accessibility of the resources. How local residents would react to changes in accessibility could be of great interest. One final change might be to ask a subset of our sample about whether, and how, they use a specific area in the Tanana Basin.

SECTION II

General Summary Data from the Forest Use Survey

The population from which we drew the sample for the Forest Use Survey is all households of the Tanana River drainage. The survey procedure was carried out as described by Salant and Dillman (1994), from which we expected to obtain a response rate of between 50% and 60% (p. 54.) We did in fact receive completed survey instruments from 54% of all deliverable addresses (table 1.) In order to be 95% confident that we have a sampling error of no greater than ±5%, we needed to receive at least 384 completed surveys (p. 54.) Since we received 474 completed responses, we can be assured that we fall within this range.

Table 15: Forest Use Survey sample summary

Original Sample Size	1000
Number of respondents	474
Number of undeliverable	122
Adjusted sample size	878
Response rate	54.0%

In designing the FUS we wanted to learn about several aspects of household forest use in addition to harvest quantities. Respondents were asked when they harvested, how they used the harvest, how they reached the harvest and where they harvested. Since the task of reporting all harvests for a one year period might seem imposing, questions that were relatively simple to answer were provided as breaks between sections. These simple questions consisted of the sort that can be answered with a check mark or by circling the answer.

Warm-up Question: General Resource Use

We wanted to know how people characterize their use of the forest. Is their use primarily for subsistence or personal use or are the harvests used to supplement income or is recreation the primary use or is it some mix of some or all of these? In order to make respondents start thinking about the ways they use the forest, this question was asked as a warm-up to the survey.

In the present survey we allowed respondents to pick as many options as applied to them. However, in future surveys it may be better to ask households to rank the various characterizations if they wish to answer more than one.

Table 16: Summary of response to general use of Tanana Valley Forests

	# of responses	% of households
For Subsistence purposes	123	25.9%
For recreation purposes	393	82.9%
To supplement our income	47	9.9%
For home use	209	44.1%
Do not use Tanana Valley	44	9.3%
Other	34	7.2%

Ranking Question: How do you rate the overall management of public lands in the Tanana Valley?

No inventory of land use would be complete without knowing how the users of the public lands feel about how those lands are managed. We gave respondents an opportunity to rate each of the government agencies with land management responsibilities in the Tanana River Watershed.

Table 17: Ranking of government agency's management of public lands

	1 Poor	2 Fair	3 Good	4 Very Good	5 Excellent	Average
AK Dept. of Fish and Game	29	29	131	95	43	3.2
AK Div. Of Forestry	9	49	151	72	26	3.2
AK Div. Of Parks and Outdoor Recreation	15	47	157	82	36	3.2
Bureau of Land Management	55	78	109	44	17	2.6
US Fish and Wildlife Service	59	69	102	39	18	2.6
AK Div. Of Mining, Land and Water	33	55	114	35	12	2.8

Yes or No Questions

While these questions are meant to allow respondents to take a break from thought intensive questions, we by no means wanted to ask fluff questions. Thus in our first yes or no option (see table 4,) we asked a question of commercial interest as well as resource use. The next one asked a policy question (table 5) and the third asked about participation in interest groups (table 6.)

Table 18: Have you ever used Alaska wood products for a building project?

Yes	201	42.4%
No	114	24.1%
No Answer	136	28.7%

Table 19: Do you think the state forest should have a formal trail system?

Yes	207	43.7%
No	179	37.8%
No Answer	72	15.2%

Table 20: Do you belong to any outdoor activity or conservation groups?

Yes	121	25.5%
No	285	60.1%
No Answer	51	10.8%

In future iterations of the survey the wood use question very likely would remain to track how local use of local products changes over time. The interest group question might also remain, though reworded to allow any person who belongs to any kind of group that would be interested in the outdoors or resource use. The policy question would undoubtedly address a different policy issue.

Multiple Answer Checkbox Questions

We wanted to know why our respondents live in the Tanana Valley. Note in table 7 that more than half of respondents answered each of the top five options. In the future we may want to ask people to rank these reasons rather than select the ones that apply. We can gain some intuition as to the most important properties from the information here, but had respondents ranked the choices instead, the numbers below might be very different.

This survey question did not include the choices for University of Alaska and military. We realized, early in the data entry process, that these options should have been included and so added categories for them. Since four people said military here and 22 people listed military as occupation (see table 12,) we have to wonder whether more respondents would have given military as a reason they are here.

Table 21: Why do you live in the Tanana Valley?

For the natural beauty	283
For the freedom offered here	257
For a job	248
For the recreation opportunities	248
Because of the people and community here	241

For a good place to raise children	205
Because you have family here	142
Other	61
University of Alaska Fairbanks	7
Military	4

Sample Demographics

Table 22: Gender of respondents

Male respondents	379
Female respondents	82
Number who answered	461

Table 23: Age of respondents

Youngest	20
Oldest	92
Average	50.57
Number who answered	458

Table 24: How long in Alaska

Average	26.25
Number who answered	458

Table 25: Education level

Average	15.18
number who answered	460

Table 26: Occupation

Unemployed	3
Retired	88
Disabled	1
Homemaker	7
Student	5
Trade/Blue Collar	99
Clerk/Sales	22
Management	35
Professional	148
Military	22
Self Employed	19
Number who answered	449

Table 27: Household size

Number of people--	
Average	2.78
Number under 18	0.71

Table 28: Household income

Under 10,000	10
10,001 to 20,000	22
20,001 to 30,000	33
30,001 to 40,000	41
40,001 to 50,000	41
50,001 to 60,000	64
60,001 to 70,000	47
70,001 to 80,000	45
80,001 to 90,000	27
90,001 to 100,000	31
100,001 to 150,000	49
Over 150,000	14
Number who answered	424

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FISCAL NOTE

STATE OF ALASKA
2003 LEGISLATIVE SESSION

Fiscal Note Number: 1
Bill Version: SB 149
(S) Publish Date: 5/6/03

Revision Date/Time (Note if correction):
Dept. Affected: Natural Resources
Title: Repeal certain timber sale requirements.
BRU: Resource Development
Component: Forestry Mgt & Development
Sponsor: Sen. Taylor
Requester: (S) RES
Component No.: 435

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Personal Services						
Travel						
Contractual						
Supplies						
Equipment						
Land & Structures						
Grants & Claims						
Miscellaneous						
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0
CAPITAL EXPENDITURES						
CHANGE IN REVENUES ( )						

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type--Do not abbreviate)						
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY2003) cost: 0.0
Mark this box (X) if funding for this bill is included in the Governor's FY 2004 budget proposal:

POSITIONS

Full-time						
Part-time						
Temporary						

ANALYSIS: *(Attach a separate page if necessary)*

There is no anticipated fiscal impact associated with implementation of this legislation.

Prepared by: Jeff Jahnke, Director
Phone 269-8474
Division: Forestry
Date/Time 4/29/2003
Approved by: Tom Irwin, Commissioner
Date 4/29/2003
Agency: Natural Resouces

(Revised 9/2002 OMB)

DNR Fiscal Note

Journal Text

H

05-06-2003 Senate Journal 1178
SB 149
The Resources Committee considered SENATE BILL NO. 149 "An Act relating to timber and to the sale of timber by the state" and recommended it be replaced with

05-06-2003 Senate Journal 1179
CS FOR SENATE BILL NO. 149(RES) "An Act relating to timber, to the sale of timber by the state, and to the management of state forests."

Signing do pass: Senator Ogan, Chair; Senators Seekins, Ben Stevens, Wagoner, Dyson. Signing do not pass: Senator Elton. Signing amend: Senator Lincoln.

The following fiscal information was published today:
Fiscal Note No. 1, zero, Department of Natural Resources

The bill was referred to the Finance Committee.

Bill Root: Display Bill Root

TO REPORT PROBLEMS WITH BASIS INQUIRY

LIVE KTOO STREAMS

Return to Basis Main Menu (23rd Legislature)
Return to Legislature Home Page

ALASKA BOREAL FOREST COUNCIL

Sustaining our partnership with the land

Community
Ecology
Economy

May 15, 2003

The Issue: If passed into law as currently written, CSSB 149(RES) " Timber/Timber Sales/State Forests" would change the primary purpose of the state forests.

Why we are coming to you as a natural resource professional:

1. To make you aware of the bill so that you can decide whether you want to offer testimony on it, and

2. To help the Alaska Boreal Forest Council (ABFC) focus its testimony. ABFC plans to testify when the bill is heard in House Resources . It may be scheduled as soon as Friday, May 16, 1 p.m. (For further information about committee schedule, check BASIS: or call the Legislature Information Packet, 452-4448).

There are four critical reasons for our opposition to the current wording:

1. It replaces multiple resource values with management emphasis on a single resource value. We feel it runs counter to the current professional standard for best forest resource management practices.

2. It clearly designates one use as primary above all others, thus giving multiple use consideration a lower status than current definition. This clearly runs counter to the intention behind creation of the Tanana Valley State Forest in 1983 (The specific wording is stated in a letter from Senator Bettye Fahrenkamp to District Forester Les Fortune, dated December 14, 1984). Most importantly, it runs counter to the stated requirements and wishes of the broad Interior Alaska community expressed repeatedly over the past decade through public opinion polls, community forest round tables and technical workshops (Documentation available).

3. If CSSB 149(RES) is signed into law as currently worded, it will almost certainly reduce the public's confidence in state forest management. If our experience over the past decade is valid, this could seriously set back many of the advances we've made in the debate over forest development in Interior Alaska over the past 10 years. The Alaska Boreal Forest Council does not want to see this happen. It is not in the best interests of our state, the resources, or the goal of developing sustainable forest-based economies throughout Interior Alaska.

4. While the most dramatic consequences of CSSB 149(RES) as currently worded would be long term, the short term impact is likely to be a change in the tenor of public participation in subsequent revisions of the TVSF Management Plan.

(907) 457-8453 *PO Box 84530, Fairbanks, AK 99708-4530* *Fax (907) 457-5185*
abfc@mosquitonet.com *http://www.akborealforest.org*

What should the primary purpose of the state forests be?

THE EXISTING STATE STATUTE describes the primary purpose in the establishment of state forests as follows: "The primary purpose in the establishment of state forests is multiple use management that provides for the production, utilization, and replenishment of timber resources while perpetuating personal, commercial, and other beneficial uses of resources."

THE CHANGE PROPOSED BY CSSB 149(RES) IS "Repeal of Certain Timber Sale Requirements," would change the primary purpose of the state forests to read as follows: "The primary purpose in the establishment of state forests is timber management that provides for the production, utilization, and replenishment of timber resources while allowing other beneficial uses of public land and resources."

OPTION 1: ABFC would offer this amendment to CSSB 149(RES): "The primary purpose in the establishment of state forests is forest management that provides for the production, utilization, and replenishment of commercially valuable resources while allowing other multiple uses of public land and resources."

OPTION 2. ABFC would offer this amendment to CSSB 149(RES): "The primary purpose in the establishment of state forest is timber management that provides for the production, utilization, and replenishment of commercial timber and non-timber resources while allowing other multiple uses of public land and resources."

Please let us know as soon as possible:

Which of the purpose statements (see above) do you feel is most in line with modern forest management standards?

Email: jan.abfc@ak.net

Thank you.

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